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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/638,214

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Ernie Gonzalez

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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
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EXAMINER

CHEN, SOPHIA S

ART UNIT

PAPER NUMBER

2852

DATE MAILED: 08/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/638,214

Applicant(s)

GONZALEZ ET AL.

Examiner

Sophia S. Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-11,13-15,17-19,21-27 and 29 is/are rejected.
- 7) ☒ Claim(s) 8,12,16,20 and 28 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/7/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 40 (Figure 1), 1107 (Figure 11), and 2110 (Figure 11). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 1102 (page 10, lines 9, 11, 12, and 14). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s)

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should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:

- a. Page 8, line 17, "d1" should be "d2".
- b. Page 8, line 18, "d2" should be "d1".

Appropriate correction is required.

Claim Objections

4. Claims 4-6 are objected to because of the following informalities:

- a. Claim 4, line 2, "the cavity" should be "a cavity" to have a proper antecedent basis.
- b. Claim 5, line 2, "the cavity" should be "a cavity" to have a proper antecedent basis.
- c. Claim 6, line 2, "the cavity" should be "a cavity" to have a proper antecedent basis.
- d. Claim 6 is objected to because it is identical to claim 4.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 2, 3, 7, 10, 11, 17, 19, 23-26, and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Uehara et al. (US Pat. No. 5,737,679)

The patent discloses a fuser for an image forming device, comprising: a fuser roller (or a second roller) 21; a pressure roller (or a first roller) 22 adjacent the fuser roller 21 and having a cavity therein (Figure 2(A)); a first inner roller (or a rotatable member) 23 positioned within the cavity of the pressure roller (or first roller) 22 (Figure 2(A)), the first inner roller 23 contacts an inner surface of the pressure roller 22 (column 9, lines 1-7 and Figure 2(A)); the first inner roller (or the rotatable member) 23 having a convex outer surface (column 9, lines 13-15 and 18-23; Figure 2(B)); the first inner roller (or the rotatable member) 23 comprises an outer wall 35, the outer wall 35 having a variable thickness (column 9, lines 18-23); a heating element 31 disposed within the fuser roller 21 and external to the first inner roller 23 (Figure 2(A)); and the first inner roller 23 has a larger diameter at a central region thereof than at the ends thereof (Figure 2(B)).

The patent further discloses the first and second rollers 22 and 21 configured to fuse toner 28 to print media 27 as the print media 27 passes between the first and second rollers 22 and 21 (Figure 2(A)); the inner roller 23

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has an axis of rotation that is coaxial with (and distinct from and in spaced relation to) an axis of rotation of the first roller 22 (Figure 2(A)); inherently because they don't have the same center points); and the axes of rotation of the first and second rollers 22 and 21 and the axis of rotation of the inner roller 23 are substantially collinear (Figures 2(A) and 2(B)).

7. Claim 22 is rejected under 35 U.S.C. 102(b) as being anticipated by Uehara et al.

The patent discloses a fuser comprising: a first roller 21; a second roller 22; and means 23 disposed within the second roller 22 for maintaining a substantially uniform pressure within the nip (column 9, lines 42-48; inherently the even nipping width is provided by the uniform pressure).

8. Claims 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Kishi et al. (US Pat. No. 5,854,465)

The patent discloses a fuser comprising: a first roller 1 having a substantially cylindrical wall (Figure 10); a second roller 3; a rotatable member 2 inside the first roller 1, the rotatable member 2 having a convex external surface (Figure 10); wherein a central region of the convex external surface contacts the cylindrical wall and end regions of the convex external surface of the rotatable member 2 do not contact the cylindrical wall (Figure 10).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to

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be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 2-7, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kishi et al. in view of Uehara et al.

Kishi et al. discloses a fuser for an image forming device, the fuser comprising: a fuser roller 1; a pressure roller 3 adjacent the fuser roller 1 (Figure 7B); a second inner roller 2 positioned within a cavity of the fuser roller 1 (Figures 7B and 10); the second inner roller 2 has a convex outer surface (Figure 10); and a heat element disposed within the fuser roller 1 (column 4, lines 20-37).

Kishi et al. differs from the instant claimed invention in not disclosing a first inner roller positioned within a cavity of the pressure roller; the first roller has a convex outer surface; and an outer wall of the first inner roller having a variable thickness.

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Uehara et al. discloses a fuser for an image forming device, the fuser comprising: a fuser roller 21; a pressure roller 22 having a cavity (Figure 2(A)); a first inner roller 23 positioned within the cavity of the pressure roller 22, the first inner roller 23 contacts an inner surface of the pressure roller 22 (Figures 2(A) and 2(B)); the first inner roller 23 has a convex outer surface (Figure 2(B)); the first inner roller 23 comprises an outer wall 35, the outer wall 35 having a variable thickness (column 9, lines 18-23); a heating element 31 disposed within the fuser roller 21 and external to the first inner roller 23 (Figure 2(A)); and the first inner roller 23 has a larger diameter at a central region thereof than at the ends thereof (column 9, lines 18-23 and Figure 2(B)).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the first inner roller positioned within the cavity of the pressure roller and the structure of the first inner roller as taught by Uehara et al. in place of the pressure roller of Kishi et al. to further obtain a substantially even nipping width (Uehara et al.; column 9, lines 45-48).

12. Claims 1, 13-15; 23-27, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hediger (US Pat. No. 5,124,755) in view of Uehara et al.

Hediger discloses a fuser for an image forming device, the fuser comprising: a fuser roller (a second roller) 11; a pressure roller (a first roller or an outer roller) 12 adjacent the fuser roller 11 and having a cavity therein (Figure 3); a first inner roller 15 positioned within the cavity of the pressure roller (or the outer roller) 12; a second inner roller 16 positioned within the cavity of the pressure roller (or the outer roller) 12 (Figure 3); and the fuser roller 11, the

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pressure roller 12, and the first and second inner rollers 15, 16 each having an axis of rotation, wherein the axes of rotation of the fuser roller 11, the pressure roller 12, the first and second rollers 15, 16 are parallel (Figure 3).

Hediger further discloses the first and second inner rollers 15, 16 contact the outer roller 12 (Figure 3); the first and second rollers 12, 11 configured to fuse toner to print media 8 as the print media 8 passes between the first and second rollers 12, 11 (column 2, lines 63-66; Figures 3 and 4); an inner roller 15 or 16 has an axis of rotation that is coaxial with (or distinct from and in spaced relation to) an axis of rotation of the first roller 12 (Figure 3); multiple inner rollers 15 and 16 disposed within the first roller 12 (Figure 3); and the axes of rotation of the first and second rollers 12, 11 and the axis of rotation of the inner roller 15 or 16 are substantially collinear (Figure 3).

Hediger differs from the instant claimed invention in not disclosing the first and second inner rollers each having a convex external surface along an axial length thereof.

Uehara et al. discloses a fuser for an image forming device, the fuser comprising: a fuser roller 21; a pressure roller 22 having a cavity (Figure 2(A)); a first inner roller 23 positioned within the cavity of the pressure roller 22, the first inner roller 23 contacts an inner surface of the pressure roller 22 (Figures 2(A) and 2(B)); the first inner roller 23 has a convex outer surface (Figure 2(B)); the first inner roller 23 comprises an outer wall 35, the outer wall 35 having a variable thickness (column 9, lines 18-23); and the first inner roller 23 has a diameter on

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the ends thereof that is less than a diameter at the center thereof (column 9, lines 18-23 and Figure 2(B)).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the inner roller having a convex outer surface as taught by Uehara et al. to the inner rollers of Hediger to obtain a substantially even nipping width (Uehara et al.; column 9, lines 45-48).

13. Claims 9 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara et al. in view of Kniazzezh (US Pat. No. 5,728,252).

Uehara et al., as discussed above, differs from the instant claimed invention in not disclosing the outer wall being thinner in a central region and thicker in outer (end) regions.

Kniazzezh discloses a roller 16 having a convex outer surface, the roller 16 comprising an outer wall 56, the outer wall 56 being thinner in a central region and thicker in outer end regions (Figure 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the convex roller being thinner in a central region and thicker in outer end regions as taught by Kniazzezh in place of the convex inner roller of Uehara et al. because of the same functionality for having the uniform pressure.

Allowable Subject Matter

14. Claims 8, 12, 16, 20, and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other Prior Art

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Henry et al. (US Pat. No. 4,567,349) discloses a fuser comprising: a fuser roller; a pressure roller; and two inner rollers being positioned within a cavity of the fuser roller.

Mui et al. (US Pat. No. 5,467,178) discloses a fuser comprising: a fuser roller; a pressure roller; and an inner roller.

Ito et al. (US Pat. No. 6,035,174) discloses a fuser comprising: a fuser roller; a pressure roller; and an inner roller being positioned within a cavity of the fuser roller.

Sanpei et al. (US Pat. Pub. No. US 2003/0063931 A1) discloses a fuser comprising: a fuser roller; a pressure roller; and an inner roller being positioned within a cavity of the fuser roller.

Sonoguchi et al. (JP 2001-312176) discloses a fuser comprising: a fuser roller; a pressure roller; an inner roller being positioned within a cavity of the pressure roller; and the inner roller having a convex outer surface.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sophia S. Chen whose telephone number is (703) 308-7617. The examiner can normally be reached on M-F (7:00-3:00) First Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on (703) 308-1373. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sophia S. Chen
Primary Examiner
Art Unit 2852

SSC

August 4, 2004